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# ENVIRONMENTAL PROTECTION AGENCY

■

# PHOSPHATE MANUFACTURING POINT SOURCE CATEGORY

## Effluent Guidelines and Standards

Title 40—Protection of the Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER N—EFFLUENT GUIDELINES AND STANDARDS

## PART 422—PHOSPHATE MANUFACTURING POINT SOURCE CATEGORY

### Effluent Limitation Guidelines

On September 7, 1973 notice was published in the FEDERAL REGISTER (38 FR 24470), that the Environmental Protection Agency (EPA or Agency) was proposing effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources within the phosphorus producing, phosphorous consuming and phosphate subcategories of the phosphate manufacturing category of point sources. The purpose of this notice is to establish final effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources in the phosphate manufacturing category of point sources, by amending 40 CFR Chapter I, Subchapter N, to add a new Part 422. This final rulemaking is promulgated pursuant to sections 301, 304 (b) and (c), 306 (b) and (c) and 307(c) of the Federal Water-Pollution Control Act, as amended, (the Act); 33 U.S.C. 1251, 1311, 1314 (b) and (c), 1316 (b) and (c) and 1317(c) 86 Stat. 816 et seq.; Pub. L. 92-500. Regulations regrading cooling water intake structures for all categories of point sources under section 316(b) of the Act will be promulgated in 40 CFR Part 402.

In addition, the EPA is simultaneously proposing a separate provision which appears in the proposed rules section of the FEDERAL REGISTER, stating the application of the limitations and standards set forth below to users of publicly owned treatment works which are subject to pretreatment standards under section 307(b) of the Act. The basis of that proposed regulation is set forth in the associated notice of proposed rulemaking.

The legal basis, methodology and factual conclusions which support promulgation of this regulation were set forth in substantial detail in the notice of public review procedures published August 6, 1973 (38 FR 21202) and in the notice of proposed rulemaking for the phosphate manufacturing category. In addition, the regulations as proposed were supported by two other documents: (1) The document entitled "Development Document for Proposed Effluent Limitations Guidelines and New Source Performance Standards for the PHOSPHOROUS DERIVED CHEMICALS Segment of the Phosphate Manufacturing Point Source Category" (August 1973) and (2) the document entitled "Economic Analysis of Proposed Effluent Guidelines, The Industrial Phosphate Industry" (August 1973). Both of these documents were made available to the public and circulated to interested persons at approximately the time of publication of the notice of proposed rulemaking.

Interested persons were invited to participate in the rulemaking by submitting written comments within 30 days from the date of publication. Prior public participation in the form of solicited comments and responses from the States, Federal agencies, and other interested parties were described in the preamble to the proposed regulation. The EPA has considered carefully all of the comments received and a discussion of these comments with the Agency's response thereto follows.

The regulation as promulgated contains some significant departures from the proposed regulation. The following discussion outlines the reasons why these changes were made and why other suggested changes were not made.

(a) Summary of comments.

The following responded to the request for written comments contained in the preamble to the proposed regulation: Mobil Oil Corporation; FMC Corporation; Manufacturing Chemists Association; Stauffer Chemical Company; Hooker Industrial Chemicals; University of Florida, Institute of Food and Agricultural Sciences; Pasaic Valley Sewerage Commissioners; County Sanitation District of Los Angeles County; U.S. Department of Commerce; and Monsanto Industrial Chemicals Company. Each of the comments received was carefully reviewed and analyzed. The following is a summary of the significant comments and the Agency's response to those comments.

(1) It was stated by several commenters that a no discharge guideline legally could not be applied until 1985.

EPA has determined that in the case of certain subcategories of the phosphate manufacturing category, either the best practicable control technology currently available or the best available technology economically achievable is the total recirculation of process waste water. In section 101(a)(2) of the Act, Congress established as a national goal the elimination of the discharge of pollutants into navigable waters by 1985. However, Congress also set requirements for technology based standards in sections 301, 304(b) and 306 which require the maximum degree of reduction of pollutant discharges prior to 1985, which is consistent with the technical and economic factors to be taken into account under sections 304(b) and 306 of the Act (notably, standards are to be set for 1977 and 1983 compliance, but no regulations are to be promulgated for 1985). The Agency will require the effluent reduction attainable by the best practicable control technology when establishing regulations under section 304(b) of the Act whether that reduction is to some degree of permitted discharge or down to no discharge.

(2) It was commented that best practicable control technology currently available should be based on a large number of plants if not the entire industry.

The Agency defines best practicable control technology currently available to be the average of the best existing performance by plants of various sizes, ages and unit processes within each industrial category or subcategory. This average is not based upon a broad range of plants within an industrial category or subcategory, but is based upon performance levels achieved by exemplary plants. In those industrial categories where present control and treatment practices are uniformly inadequate, a higher level of control than any currently in place may be required if the technology to achieve such higher level can be practicably applied by July 1, 1977. Thus best practicable control technology currently available may be based on a few, one or no exemplary plants within that industrial category.

(3) Several commenters pointed out that runoff cannot be kept out of treatment ponds in some terrain and that a state of no discharge cannot be met during periods of heavy rainfall.

Treatment ponds can be built or modified to minimize, if not eliminate, intrusion of storm runoff originating outside of the pond retaining walls. Such ponds can also have sufficient free board as to retain rainfall. Those subcategories which employ treatment ponds are water consuming processes which can utilize the captured rainfall. Hence, there should be no need to discharge pond water.

(4) It was mentioned that the recycle of process waste water for food grade calcium phosphates would cause the Food and Drug Administration (FDA) specifications for process water to be violated.

Water is used in the manufacture of food grade calcium phosphates for reasons of transport or homogeneity, but not for purification. Hence the waste water contains the product, but nothing harmful to the product, which is what the FDA specifications are designed to protect.

The problem of segregation of waste waters, water balances, and storm water runoff, however, are sufficiently great that the industry will not be able to achieve total recycle by 1977 and yet meet FDA specifications. A discharge will therefore be allowed after suitable treatment as demonstrated in the Development Document.

(5) It was suggested that a limitation for dissolved solids be dropped for best practicable control technology currently available, since in the concentration range of the constituents involved, technology to achieve the proposed degree of control does not exist.

The limitation proposed was based on the raw waste load and was not intended to force treatment of dissolved solids. The limitation was intended to prohibit additional dissolved solids from being discharged. However, due to variability in the process this limitation may require such treatment. Therefore, the limitation on dissolved solids is replaced by limits on specific dissolved constituents that are considered to be the principal pollutants or characteristics to be controlled.

(6) It was suggested that the limits proposed by the Effluent Standards and Water Quality Information Advisory Committee (ESWQIAC) for the phos-

phorus production subcategory be used.

The ESWQIAC limits include two additional phosphorus plants as exemplary. EPA has since accepted these plants as exhibiting best practicable control technology and has allowed a discharge based upon the data in the Development Document for the treatment capabilities of these plants. Therefore, although the Agency does not agree with the underlying rationale for establishing the ESWQIAC limits, the data in the Development Document does support the specific limits proposed by ESWQIAC.

(7) It was requested that discharges to publicly owned treatment works be allowed.

Pretreatment and discharge of waste waters to publicly owned treatment works from existing sources in the phosphate category are covered in the pretreatment guidelines that are proposed at the time this limitation is promulgated. Comments relating to existing sources should be directed to that regulation. For new sources the Agency considers the process waste water constituents from the phosphorus production and phosphorus consuming subcategories to be incompatible with publicly owned treatment works, and that the treatment technology that has been described in Section VII of the Development Document can achieve no discharge of process waste water pollutants to either navigable waters or to publicly owned treatment works.

The principal process waste water pollutant for the phosphate subcategory is phosphate, which cannot be adequately treated by primary or secondary treatment works. Phosphate, however, is considered to be compatible with publicly owned treatment works designed, constructed and operated to achieve optimal removal of dissolved phosphate, and a discharge to such treatment works will be allowed.

(8) Several commenters considered the capital costs of the model treatment systems to be underestimated and that the economic impact is understated.

The Agency has recalculated, in Section VIII of the Development Document, the cost information on model treatment systems as the result of additional data submitted by industry. The calculated changes do not affect the conclusions of the economic analysis, since the percentage increase in capital cost is not significant.

(9) It was stated that some plants were incorrectly cited as to whether they were achieving no discharge or not.

The necessary qualifiers were added to the descriptions in the Development Document of those plants that were disputed. The changes that were made involved treatment of certain portions of the process waste water and do not substantially affect the overall conclusions of the Development Document.

(10) The general comment was made that zero discharge cannot be achieved for some products.

The Agency has reevaluated the data and is allowing a discharge for phosphorus and food grade calcium phosphates production for the 1977 limitation for the reasons given in comments (4) and (6). The Agency believes the technology exists to substantiate a no discharge of process waste water limitations for the remaining manufacturing processes.

(11) A range of values was recommended rather than a single value for each parameter.

The Agency considers that the limitations already represent ranges, taking into account differences in process, age, size and other factors. Subcategorization has been done to take these factors into account with different limitations for each subcategory. Within subcategories, exceptions to the limitations have been made for certain manufacturing segments or products, constituting a wider range. Each numerical limitation represents a maximum average of daily values over a given period of time. This in effect represents a range from zero up to the specific limitation. A maximum variation is also given for each maximum average limitation. The Agency considers an upper and lower limitation to be somewhat meaningless since the actual range would be from zero to the upper limitation. Thus, in effect, the argument becomes one of making the EPA limitations less severe, since it has been suggested that the EPA limitations should be the lower limits. The EPA limitations are achievable and currently available.

(12) One commenter stated that there is no correlation of contractor validation data with data or conclusions contained in the Development Document.

Data calculated from samples collected by the contractor were not primarily intended to form the basis of a limitation. The validation data was mainly used by the contractor to determine if existing data can be correctly used to establish limitations. Such a correlation does not appear in the Development Document, but the raw data may be reviewed at the EPA Information Center, Room 227, West Tower, Waterside Mall, Washington, D.C. Only the data that appears in the Development Document was used in formulating the effluent limitations.

(13) It was stated that the evaporation of $PCl_3$ and $POCl_3$ process waste waters would require an excessive amount of energy.

The 1983 limitations for the manufacture of $PCl_3$ and $POCl_3$ are no discharge of process waste water pollutants which can be accomplished by maximum waste water recycle and evaporation of the blowdown. The Agency believes that sufficient time exists for each plant to be examined by the industry in order to minimize water usage, maximize solar evaporation and thus minimize power usage.

(14) It was pointed out that percolation can occur from waste water ponds.

Infiltration of pond water to ground water cannot be controlled by this regulation. Possible problems have been pointed out in the preamble to the proposed regulation (38 FR 24470) and methods of correction have been suggested.

(15) The comment was made that no discharge of process waste water pollutants is an impractical limitation because the methods of analysis are not sufficiently sensitive.

Where no discharge of process waste water pollutants is prescribed, model treatment systems are described in the Development Document in which no process waste waters are discharged, hence no process waste waters pollutants. For the purpose of determining if process waste water pollutants have contaminated other allowable discharges, this limitation is considered to be the detectable limit of the appropriate analytical method.

(16) It was suggested that no discharge of process waste water pollutants should mean no discharge that would degrade the quality of the receiving stream.

The Act is quite specific in stating the difference between limitations based on treatment technology and limitations handled on a case by case basis in order to insure that water quality standards are attained. The limitations promulgated in this regulation are technology based and independent of water quality standards, as is the intent of the Act.

(17) It was suggested that concentrations (mg/l) should be used with instantaneous maximum values instead of production based limitations.

Production based limitations such as kg of pollutant per kkg of product insure that dilution is not practiced. Daily maximum values are also promulgated.

(18) One commenter stated that phosphate limitations for the phosphate industry are unduly restrictive when compared to phosphate limitations for publicly owned treatment works.

The Act establishes separate time tables for industrial and municipal sources. Limitations for phosphate discharges from publicly owned treatment works will be proposed at a later date. However, effluent guidelines for industrial sources are to be based on the best practicable, best available, and best demonstrated technologies for each separate category and separate economic considerations for each category.

(19) One company agreed with the proposed limitation for the manufacture of phosphoric acid, phosphorous trichloride and phosphorous oxychloride.

(20) Another company suggested that no discharge of process waste water pollutants for the manufacture of phosphorus, sodium tripolyphosphate and food grade calcium phosphate is the best available technology rather than the best practicable control technology.

The Agency has reviewed the data and agrees that a discharge resulting from the manufacture of phosphorus and food grade calcium phosphate should be allowed for the 1977 limitations for the reasons listed in comments (4) and (6). However no discharge of process waste water pollutants still qualifies as best practicable control technology currently

available for the manufacture of sodium tripolyphosphate.

(b) Revision of the proposed regulation prior to promulgation.

As a result of public comments and continuing review and evaluation of the proposed regulation by the EPA, the following changes have been made in the regulation.

(1) Minor adjustments have been made to reflect the fact that an increased number of definitions and analytical methods have been included in 40 CFR 401 and are incorporated by reference in 40 CFR 401 and are incorporated by reference in these subparts.

(2) A discharge will be allowed for the 1977 limitation for the phosphorus production subcategory. This change was made in response to comments (2), (6), (10) and (20) in section (a) above. The limitations are based upon two plants that discharge process waste water from treatment facilities exhibiting exemplary performance.

(3) The total dissolved solids limitations for the manufacture of phosphorus trichloride and phosphorus oxychloride have been replaced with limitations on specific dissolved species. This change was made in response to comment (5) in section (a) above.

(4) A discharge will be allowed for the 1977 limitation for the manufacture of food grade calcium phosphate. The reasons for this change are listed in comments (4), (6) and (20). The limitations are based upon the volume of water used in the process and the technological capability of treating suspended solids and total phosphorus.

(5) Section 304(b)(1)(B) of the Act provides for "guidelines" to implement the uniform national standards of Section 301(b)(1)(A). Thus Congress recognized that some flexibility was necessary in order to take into account the complexity of the industrial world with respect to the practicability of pollution control technology. In conformity with the Congressional intent and in recognition of the possible failure of these regulations to account for all factors bearing on the practicability of control technology, it was concluded that some provision was needed to authorize flexibility in the strict application of the limitations contained in the regulation where required by special circumstances applicable to individual dischargers. Accordingly, a provision allowing flexibility in the application of the limitations representing best practicable control technology currently available has been added to each subpart, to account for special circumstances that may not have been adequately accounted for when these regulations were developed.

(c) Economic impact.

The changes that were made to the proposed regulations for the phosphate category do not substantially affect the initial economic analysis. These changes center about the feasibility of recycling treated process waste water rather than different treatment systems. Additional cost data was received from the phosphate manufacturing industry, and a careful review of the costs of alternate treatment technologies was performed. Appropriate upward changes to the cost estimates were made in Section VIII of the Development Document. These changes likewise do not affect the conclusions of the economic impact study, since the cost increases are minimal.

(d) Cost-benefit analysis.

The detrimental effects of the constituents of waste waters now discharged by point sources within the phosphorus production subcategory, phosphorus consuming subcategory and the phosphate subcategory of the phosphate manufacturing point source category are discussed in Section VI of the report entitled "Development Document for Effluent Limitations Guidelines for the PHOSPHORUS DERIVED CHEMICALS Manufacturing Segment of the Phosphate Manufacturing Point Source Category" (February 1974). It is not feasible to quantify in economic terms, particularly on a national basis, the costs resulting from the discharge of these pollutants to our Nation's waterways. Nevertheless, as indicated in Section VI, the pollutants discharged have substantial and damaging impacts on the quality of water and therefore on its capacity to support healthy populations of wildlife, fish and other aquatic wildlife and on its suitability for industrial, recreational and drinking water supply uses.

The total cost of implementing the effluent limitations guidelines includes the direct capital and operating costs of the pollution control technology employed to achieve compliance and the indirect economic and environmental costs identified in Section VIII and in the supplementary report entitled "Economic Analysis of Proposed Effluent Guidelines for the INDUSTRIAL PHOSPHATE INDUSTRY" (August 1973). Implementing the effluent limitations guidelines will substantially reduce the environmental harm which would otherwise be attributable to the continued discharge of polluted waste waters from existing and newly constructed plants in the phosphate manufacturing industry. The Agency believes that the benefits of thus reducing the pollutants discharged justify the associated costs which, though substantial in absolute terms, represent a relatively small percentage of the total capital investment in the industry.

(e) Publication of information on processes, procedures or operating methods which result in the elimination or reduction of the discharge of pollutants.

In conformance with the requirements of section 304(c), a manual entitled, "Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the PHOSPHORUS DERIVED CHEMICALS Segment of the Phosphate Manufacturing Point Source Category," has been published and is available for purchase from the Government Printing Office, Washington, D.C. 20401, for a nominal fee.

(f) Final rulemaking.

In consideration of the foregoing, 40 CFR Chapter I, Subchapter N is hereby amended by adding a new Part 422, Phosphate Manufacturing Point Source Category, to read as set forth below. This final regulation is promulgated as set forth below and shall be effective April 22, 1974.

Dated: January 31, 1974.

JOHN QUARLES,
*Acting Administrator.*

**Subpart A—Phosphorus Production Subcategory**

Sec.


422.10 Applicability; description of the phosphorus production subcategory.
422.11 Specialized definitions.
422.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
422.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
422.14 Reserved.
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**Subpart B—Phosphorus Consuming Subcategory**


422.20 Applicability; description of the phosphorus consuming subcategory.
422.21 Specialized definitions.
422.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
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422.25 Standards of performance for new sources.
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**Subpart C—Phosphate Subcategory**


422.30 Applicability; description of the phosphate subcategory.
422.31 Specialized definitions.
422.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
422.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
422.34 Reserved.
422.35 Standards of performance for new sources.
422.36 Pretreatment standards for new sources.


## Subpart A—Phosphorus Production Subcategory

### § 422.10 Applicability; description of the phosphorus production subcategory.

The provisions of this subpart are applicable to discharges of pollutants re-

sulting from the production of phosphorus and ferrophosphorus by smelting of phosphate ore.

**§ 422.11 Specialized definitions.**

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR 401 shall apply to this subpart.

**§ 422.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.**

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

| Effluent charscteristic | Effluent limitations | |
|---|---|---|
| | Maximum for any 1 day | Average of daily values for 30 consecutive days shall not exceed— |
| | Metric units (kg/kkg of product) | |
| TSS | 1.0 | 0.5 |
| Total phosphorus | .30 | .15 |
| Fluoride | .10 | .05 |
| Elemental phosphorus. | No detectable quantity. | |
| pH | Within the range 6.0 to 9.0. | |
| | English units (lb/1,000 lb of product) | |
| TSS | 1.0 | 0.5 |
| Total phosphorus | .30 | .15 |
| Fluoride | .10 | .05 |
| Elemental phosphorus. | No detectable quantity. | |
| pH | Within the range 6.0 to 9.0. | |

**§ 422.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.**

The following limitations establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable: there shall be no discharge of process waste water pollutants to navigable waters.

**§ 422.14 [Reserved]**

**§ 422.15 Standards of performance for new sources.**

The following standards of performance establish the quantity or quality of pollutants or pollutant properties which may be discharged by a new source subject to the provisions of this subpart: there shall be no discharge of process waste water pollutants to navigable waters.

**§ 422.16 Pretreatment standards for new sources.**

The pretreatment standards under section 307(c) of the Act for a source within the phosphorus production subcategory, which is a user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to the navigable waters), shall be the standard set forth in 40 CFR Part 128, except that, for the purpose of this section, § 128.133 of this title shall be amended to read as follows:

"In addition to the prohibitions set forth in 40 CFR 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works shall be the standard of performance for new sources specified in 40 CFR 422.15; provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall, except in the case of standards providing for no discharge of pollutants, be correspondingly reduced in stringency for that pollutant."

## Subpart B—Phosphorus Consuming Subcategory

**§ 422.20 Applicability; description of the phosphorus consuming subcategory.**

The provisions of this subpart are applicable to discharges of pollutants resulting from the manufacture of phosphoric acid, phosphorus pentoxide, phosphorus pentasulfide, phosphorus trichloride, and phosphorus oxychloride directly from elemental phosphorus. The production of phosphorus trichloride and phosphorus oxychloride creates waste water pollutants not completely amenable to the procedures utilized for best practicable control technology currently available. The standards set for phosphorus trichloride manufacture and phosphorus oxychloride manufacture, accordingly, must differ from the rest of the subcategory at this level of treatment.

**§ 422.21 Specialized definitions.**

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

**§ 422.22 Effluent limitations guidelines, representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.**

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that

facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

The following limitations establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

(a) There shall be no discharge of process waste water pollutants to navigable waters from the manufacture of phosphoric acid, phosphorus pentoxide, or phosphorus pentasulfide.

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this paragraph, which may be discharged in process waste water from phosphorus trichloride manufacturing on the basis of production:

| Effluent characteristic | Effluent limitations: Maximum for any 1 day | Effluent limitations: Average of daily values for 30 consecutive days shall not exceed— |
|---|---|---|
| | Metric units (kg/kkg of product) | |
| TSS | 1.4 | 0.7 |
| Total phosphorus | 1.6 | .8 |
| Arsenic | .0001 | .00005 |
| Elemental phosphorus | No detectable quantity. | |
| pH | Within the range 6.0 to 9.0. | |
| | English units (lb/1,000 lb of product) | |
| TSS | 1.4 | 0.7 |
| Total phosphorus | 1.6 | 0.8 |
| Arsenic | .0001 | .00005 |
| Elemental phosphorus | No detectable quantity. | |
| pH | Within the range 6.0 to 9.0. | |

(c) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this paragraph, which may be discharged in process waste water from phosphorus oxychloride manufacturing on the basis of production:

| Effluent characteristic | Effluent limitations: Maximum for any 1 day | Effluent limitations: Average of daily values for 30 consecutive days shall not exceed— |
|---|---|---|
| | Metric units (kg/kkg of product) | |
| TSS | 0.3 | 0.15 |
| Total phosphorus | .34 | .17 |
| pH | Within the range 6.0 to 9.0. | |
| | English units (lb/1,000 lb of product) | |
| TSS | 0.3 | 0.15 |
| Total phosphorus | .34 | .17 |
| pH | Within the range 6.0 to 9.0. | |

**§ 422.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.**

The following limitations establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable: there shall be no discharge to navigable waters of process waste water pollutants to resulting from the manufacture of phosphoric acid, phosphorus pentoxide, phosphorus pentasulfide, phosphorus trichloride or phosphorus oxychloride.

**§ 422.24 [Reserved]**

**§ 422.25 Standards of performance for new sources.**

The following standards of performance establish the quantity or quality of pollutants or pollutant properties which may be discharged by a new source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants to navigable waters.

**§ 422.26 Pretreatment standards for new sources.**

The pretreatment standards under section 307(c) of the Act for a source within the phosphorus consuming subcategory, which is a user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to the navigable waters), shall be the standard set forth in 40 CFR Part 128, except that, for the purpose of this section, § 128.133 of this title shall be amended to read as follows:

"In addition to the prohibitions set forth in 40 CFR 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works shall be the standard of performance for new sources specified in 40 CFR 422.25; provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall, except in the case of standards providing for no discharge of pollutants, be correspondingly reduced in stringency for that pollutant."

## Subpart C—Phosphate Subcategory

**§ 422.30 Applicability; description of the phosphate subcategory.**

The provisions of this subpart are applicable to discharges of pollutants resulting from the manufacture of sodium tripolyphosphate, animal feed grade, calcium phosphate and human food grade calcium phosphate from phosphoric acid. The production of human food grade calcium phosphate creates waste water pollutants not completely amenable to the procedures utilized for best practicable control technology currently available. The standards set for human food grade calcium phosphates accordingly must differ from the rest of the subcategory at this level of treatment.

**§ 422.31 Specialized definitions.**

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR 401 shall apply to this subpart.

**§ 422.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.**

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharge or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

The following limitations establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

(a) There shall be no discharge of process waste water pollutants to navigable waters from the manufacture of sodium tripolyphosphate, or animal feed grade calcium phosphate.

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this paragraph, which may be discharged in process waste water from human food grade calcium phosphate manufacturing based on production:

| Effluent characteristic | Effluent limitations | |
|---|---|---|
| | Maximum for any 1 day | Average of daily values for 30 consecutive days shall not exceed |
| | Metric units (kg/kkg of product) | |
| TSS | 0.12 | 0.06 |
| Total phosphorus | .06 | .03 |
| pH | Within the range 6.0 to 9.0. | |
| | English units (lb/1,000 lb of product | |
| TSS | 0.12 | 0.06 |
| Total phosphorus | .06 | .03 |
| pH | Within the range 6.0 to 9.0. | |

**§ 422.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.**

The following limitations establish the the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable: There shall be no discharge to navigable waters of process waste water pollutants resulting from the manufacture of sodium tripolyphosphate, animal feed grade calcium phosphate, or human food grade calcium phosphate.

**§ 422.34 [Reserved]**

**§ 422.35 Standards of performance for new sources.**

The following standards of performance establish the quantity or quality of pollutants or pollutant properties which may be discharged by a new source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants to navigable waters.

**§ 422.36 Pretreatment standards for new sources.**

The pretreatment standards under section 307(c) of the Act for a source within the phosphate subcategory, which is a user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to the navigable waters), shall be the standard set forth in 40 CFR Part 128, except that process waste waters from this subcategory are not considered to be incompatible with publicly owned treatment works designed, constructed and operated to remove dissolved phosphate and, for the purpose of this section, § 128.133 of this title shall be amended to read as follows:

"In addition to the prohibitions set forth in 40 CFR 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works shall be the standard of performance for new sources specified in 40 CFR 422.35; provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall, except in the case of standards providing for no discharge of pollutants, be correspondingly reduced in stringency for that pollutant."

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## ENVIRONMENTAL PROTECTION AGENCY

### [ 40 CFR Part 422 ]

### APPLICATION OF EFFLUENT LIMITATIONS GUIDELINES FOR EXISTING SOURCES TO PRETREATMENT STANDARDS FOR INCOMPATIBLE POLLUTANTS FOR THE PHOSPHATE MANUFACTURING POINT SOURCE CATEGORY

#### Notice of Proposed Rulemaking

Notice is hereby given pursuant to sections 301, 304 and 307(b) of the Federal Water Pollution Control Act, as amended (the Act); 33 U.S.C. 1251, 1311, 1314 and 1317(b); 86 Stat. 816 et seq.; Pub. L. 92-500, that the proposed regulation set forth below concerns the application of effluent limitations guidelines for existing sources to pretreatment standards for incompatible pollutants. The proposal will amend 40 CFR Part 422—Phosphate Manufacturing Point Source Category, establishing for each subcategory therein the extent of application of effluent limitations guidelines to existing sources which discharge to publicly owned treatment works. The regulation is intended to be complementary to the general regulation for pretreatment standards set forth at 40 CFR Part 128. The general regulation was proposed July 19, 1973 (38 FR 19236), and published in final form on November 8, 1973 (38 FR 30982).

The proposed regulation is also intended to supplement a final regulation being simultaneously promulgated by the Environmental Protection Agency (EPA or Agency) which provides effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources within the phosphate production subcategory, the phosphorous consuming subcategory and the phosphate subcategory of the phosphate manufacturing point source category. The latter regulation applies to the portion of a discharge which is directed to the navigable waters. The regulation proposed below applies to users of publicly owned treatment works which fall within the description of the point source category to which the guidelines and standards (40 CFR Part 422) promulgated simultaneously apply. However, the proposed regulation applies to the introduction of incompatible pollutants which are directed into a publicly owned treatment works, rather than to discharges of pollutants to navigable waters.

The general pretreatment standard divides pollutants discharged by users of publicly owned treatment works into two broad categories: "Compatible" and "incompatible." Compatible pollutants are generally not subject to pretreatment standards. (See 40 CFR 128.110 (State or local law) and 40 CFR 128.131 (Prohibited wastes) for requirements which may be applicable to compatible pollutants). Incompatible pollutants are subject to pretreatment standards as provided in 40 CFR 128.133, which provides as follows:

"In addition to the prohibitions set forth in Section 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry not subject to Section 307(c) of the Act shall be, for sources within the corresponding industrial or commercial category, that established by a promulgated effluent limitations guidelines defining best practicable control technology currently available pursuant to Sections 301(b) and 304(b) of the Act; provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant: *And provided further,* That when the effluent limitations guidelines for each industry is promulgated, a separate provision will be proposed concerning the application of such guidelines to pretreatment."

The regulation proposed below is intended to implement that portion of § 128.133, above, requiring that a separate provision be made stating the application to pretreatment standards of effluent limitations guidelines based upon best practicable control technology currently available.

Questions were raised during the public comment period on the proposed general pretreatment standard (40 CFR Part 128) about the propriety of applying a standard based upon best practicable control technology currently available to all plants subject to pretreatment standards. In general, EPA believes the analysis supporting the effluent limitations guidelines is adequate to make a determination regarding the application of those standards to users of publicly owned treatment works. However, to ensure that those standards are appropriate in all cases. EPA now seeks additional comments focusing upon the application of effluent limitations guidelines to users of publicly owned treatment works.

Sections 422.15, 422.25 and 422.35 of the proposed regulation for point sources within the phosphorus production subcategory, the phosphorus consuming subcategory and the phosphate subcategory (September 7, 1973; 38 FR 24470), contained the proposed pretreatment standard for new sources. The regulation promulgated simultaneously herewith contains §§ 422.16, 422.26 and 422.36 which state the applicability of standards of performance for purposes of pretreatment standard for new sources.

A preliminary Development Document was made available to the public at approximately the time of publication of the notice of proposed rulemaking and the final Development Document is now being published. The economic analysis report was made available at the time of proposal. Copies of the final Development Document and economic analysis report will continue to be maintained for inspection and copying during the comment period at the EPA Information Center, Room 227, West Tower, Waterside Mall, 401 M Street, SW., Washington, D.C. Copies will also be available for inspection at EPA regional offices and at State water pollution control agency offices. Copies of the Development Document may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Copies of the economic analysis report will be available for purchase through the National Technical Information Service, Springfield, Virginia 22151.

On June 14, 1973, the Agency published procedures designed to insure that, when certain major standards, regulations, and guidelines are proposed, an explanation of their basis, purpose and environmental effects is made available to the public. (38 FR 15653). The procedures are applicable to major standards, regulations and guidelines which are proposed on or after December 31, 1973, and which either prescribe national standards of environmental quality or require national emission, effluent or performance standards or limitations.

The Agency determined to implement these procedures in order to insure that the public was provided with background information to assist it in commenting on the merits of a proposed action. In brief, the procedures call for the Agency to make public the information available to it delineating the major environmental effects of a proposed action, to discuss the pertinent nonenvironmental factors affecting the decision, and to explain the viable options available to it and the reasons for the option selected.

The procedures contemplate publication of this information in the FEDERAL REGISTER, where this is practicable. They provide, however, that where such publication is impracticable because of the length of these materials, the material may be made available in an alternate format.

The Development Document referred to above contains information available to the Agency concerning the major environmental effects of the regulation proposed below. The information includes: (1) The identification of pollutants present in waste waters resulting from the manufacture of phosphate, the characteristics of these pollutants, and the degree of pollutant reduction obtainable through implementation of the proposed standard; and (2) the anticipated effects on other aspects of the environment (including air, subsurface waters, solid waste disposal and land use, and noise) of the treatment technologies available to meet the standard proposed.

The Development Document and the economic analysis report referred to above also contain information available to the Agency regarding the estimated cost and energy consumption implications of those treatment technologies and the potential effects of those costs on the price and production of phosphate. The two reports exceed, in the aggregate, 100 pages in length and contain a substantial number of charts, diagrams and tables. It is clearly impracticable to publish the material contained in these documents in the FEDERAL REGISTER. To the extent possible, significant aspects of the material have been

presented in summary form in the preamble to the proposed regulation containing effluent limitations guidelines, new source performance standards and pretreatment standards for new sources within the phosphate category (38 FR 24470; September 7, 1973). Additional discussion is contained in the analysis of public comments on the proposed regulation and the Agency's response to those comments. This discussion appears in the preamble to the promulgated regulation (40 CFR Part 422) which currently is being published in the rules and regulations section of the FEDERAL REGISTER.

The options available to the Agency in establishing the level of pollutant reduction obtainable through the best practicable control technology currently available, and the reasons for the particular level of reduction selected are discussed in the documents described above. In applying the effluent limitations guidelines to pretreatment standards for the introduction of incompatible pollutants into municipal systems by existing sources in the phosphate manufacturing category, the Agency has, essentially, three options. The first is to declare that the guidelines do not apply. The second is to apply the guidelines unchanged. The third is to modify the guidelines to reflect: (1) Differences between direct dischargers and plants utilizing municipal systems which affect the practicability of the latter employing the technology available to achieve the effluent limitations guidelines; or (2) characteristics of the relevant pollutants which require higher levels of reduction (or permit less stringent levels) in order to insure that the pollutants do not interfere with the treatment works or pass through them untreated.

The first option, which would leave the introduction of incompatible pollutants unregulated by a national pretreatment standard, is inappropriate in view of the information available to the Agency concerning the effects of those pollutants in the phosphate manufacturing category and the available treatment technologies. In general, the Agency believes that treatment levels required of plants utilizing municipal systems should be comparable to those applicable to direct dischargers so that use of such systems does not result in higher levels of ultimate pollutant discharge to the navigable waters or in any unjustified economic advantage.

For the phosphorus production subcategory the process waste waters contain high concentrations of phosphates and fluorides. In addition harmful constituents such as elemental phosphorus, arsenic and cadmium could be present in these process waste waters which could interfere with the operation of publicly owned treatment works, pass through such works untreated or inadequately treated or otherwise be incompatible with such treatment works. The information available to the Agency does not indicate differences between plants which discharge directly to navigable waters and those which could utilize municipal systems significant enough to warrant varying the effluent limitations guidelines. Accordingly, it is the opinion of the EPA that these process waste waters should be treated to the level required by the application of the best practicable control technology currently available before discharge of these materials to publicly owned treatment works.

For the phosphorus consuming subcategory the process waste waters will contain the same constituents as those for the phosphorus production subcategory. This will occur because of the presence of these constituents in the raw material elemental phosphorus and the transfer of phossy water from phosphorous producing facilities to phosphorus consuming facilities in conjunction with the shipment of elemental phosphorus. Likewise, these constituents could interfere with the operation of publicly owned treatment works, pass through such works untreated or inadequately treated or otherwise be incompatible with such treatment works. The information available to the Agency does not indicate differences between plants which discharge directly to navigable waters and those which could utilize municipal systems significant enough to warrant varying the effluent limitations guidelines. Accordingly, it is the opinion of the EPA that these process waste waters should be treated to the level required by the application of the best practicable control technology currently available before discharge of these materials to publicly owned treatment works.

For the phosphate subcategory the process waste waters contain high concentrations of phosphates which could interfere with the operation of publicly owned treatment works, pass through such works untreated or inadequately treated or otherwise be incompatible with such treatment works. The information available to the Agency does not indicate differences between plants which discharge directly to navigable waters and those which could utilize municipal systems significant enough to warrant varying the effluent limitations guidelines except as described below. Accordingly, it is the opinion of the EPA that these process waste waters should be treated to the level required by the application of the best practicable control technology currently available before discharge of these materials to publicly owned treatment works.

The single exception to this requirement is that process waste waters from the phosphate subcategory may be discharged to publicly owned treatment works that are designed, constructed and operated to achieve optimal removal of dissolved phosphate. Under these conditions the process waste waters from the phosphate subcategory will be amenable to treatment in such publicly owned treatment works and therefore may be discharged to such works without the requirement for pretreatment.

Interested persons may participate in this rulemaking by submitting written comments in triplicate to the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman. Comments on all aspects of the proposed regulations are solicited. In the event comments are in the nature of criticisms as to the adequacy of data which is available, or which may be relied upon by the Agency, comments should identify and, if possible, provide any additional data which may be available and should indicate why such data is essential to the development of the regulations. In the event comments address the approach taken by the Agency in establishing pretreatment standards for existing sources, EPA solicits suggestions as to what alternative approach should be taken and why and how this alternative better satisfies the detailed requirements of sections 301, 304, and 307(b) of the Act.

A copy of all public comments will be available for inspection and copying at the EPA Information Center, Room 227, West Tower, Waterside Mall, 401 M Street SW., Washington, D.C. 20460. The EPA information regulation, 40 CFR Part 2, provides that a reasonable fee may be charged for copying.

In consideration of the foregoing, it is hereby proposed that 40 CFR Part 426 be amended to add §§ 422.14, 422.24, and 422.34. All comments received on or before March 22, 1974, will be considered.

Dated: January 31, 1974.

JOHN QUARLES,
*Acting Administrator.*

Part 422 is proposed to be amended as follows:

1. Subpart A is amended by adding § 422.14 as follows:

**§ 422.14 Pretreatment Standards for Existing Sources.**

For the purpose of pretreatment standards for incompatible pollutants established under 40 CFR 128.133, the effluent limitations guidelines set forth in 40 CFR 422.12 above shall apply, and, subject to the provisions of 40 CFR Part 128 concerning pretreatment, process waste water from this subcategory may not be introduced into a publicly owned treatment works, except in compliance with such limitations.

2. Subpart B is amended by adding § 422.24 as follows:

**§ 422.24 Pretreatment Standards for Existing Sources.**

For the purpose of pretreatment standards for incompatible pollutants established under 40 CFR 128.133, the effluent limitations guidelines set forth in 40 CFR 422.22 above shall apply, and, subject to the provisions of 40 CFR Part 128 concerning pretreatment, process waste water from this subcategory may not be introduced into a publicly owned treatment works, except in compliance with such limitations.

3. Subpart C is amended by adding § 422.34 as follows:

**§ 422.34 Pretreatment Standards for Existing Sources.**

For the purpose of pretreatment standards for incompatible pollutants established under 40 CFR 128.133, the effluent limitations guidelines set forth in 40 CFR 422.32 above shall apply, and, subject to the provisions of 40 CFR Part 128 concerning pretreatment, process waste water from this subcategory may not be introduced into a publicly owned treatment works, except in compliance with such limitations, unless such treatment works are designed, constructed and operated to remove dissolved phosphate.

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